CITY OF VICTOR (PWS 7410013)
SOURCE WATER ASSESSMENT FINAL REPORT

July 31, 2001

State of Idaho
Department of Environmental Quality

Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the act. This assessment is based on a land use inventory of the designated assessment area, sensitivity factors associated with the wells, and aquifer characteristics.

This report, *Source Water Assessment for the City of Victor,* describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Victor drinking water system (PWS 7410013) consists of one well and six springs with 300 service connections. From January 1993 to July 2000, total coliform bacteria were detected in water samples taken from the City of Victor's water distribution system. From December 1998 to July 2000, nitrate concentrations ranged from 0.18 milligrams per liter (mg/l) to 0.25 mg/l in samples collected from the City of Victor's Willow Well. From September 1993 to July 2000, nitrate concentrations ranged from 0.11 mg/l to 0.44 mg/l in samples collected from the City of Victor's springs. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. No volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) were detected in the Willow Well or the springs.

In terms of total susceptibility to inorganic contaminants (IOCs), VOCs, and SOCs, the City of Victor's Willow Well water rated moderate mainly due to agricultural land uses, the nearby location of multiple potential contaminant sources, and the hydraulic sensitivity of the aquifer. The City of Victor's Willow Well water rated high for microbial contaminants due to the fact that the potential contaminant and land use score for microbial contamination has a larger multiplier than potential contaminant scores for IOCs, VOCs, or SOCs for calculating the final susceptibility scores.

Microbial contaminants in the 3-6 and 6-10-year time of travel zones are not considered in the susceptibility analysis for ground water wells. It is unlikely that microbes in these zones would survive long enough to contaminate source water extracted by a ground water well. Consequently, in calculating the final susceptibility score for microbes, it is necessary to use a higher multiplier than for IOCs, VOCs, and SOCs due to the fact that the potential presence of microbial contamination is not counted past the 3-year time of travel zone. This separate multiplier naturalizes the microbial land use score with respect to IOCs, VOCs, and SOCs so no potential contaminant has a greater weight than the others do. For information regarding the calculation of final susceptibility scores, refer to page 20 of this report.

The City of Victor's six springs rated low for total susceptibility to IOCs, VOCs, SOCs, and microbial contamination. Although no record of the development of the springs exists, they earned a low susceptibility rating because no significant sources of contamination exist in the Game Creek watershed, which supplies the springs.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the City of Victor, source water protection activities should first focus on correcting deficiencies outlined in the Sanitary Survey. Since total coliform bacteria were detected in the distribution system, the City of Victor should investigate the development of a regular disinfection program to treat this problem. Any spills from the potential contaminant sources listed in Table 1 of this report should be carefully monitored, as should any future development or resource extraction in the Game Creek watershed. Practices aimed at reducing the amounts of manure and agricultural chemicals applied to farmland, and their potential for leaching into designated source water areas. Most of the designated assessment areas are outside the direct jurisdiction of the City of Victor. Partnerships with state and local agencies and industry groups should be established and are critical to successfully protecting Victor's drinking water sources. Due to the time involved with the movement of ground water, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil Conservation District, Caribou-Targhee National Forest Service, Caribou-Targhee Bureau of Land Management and the Natural Resources Conservation Service.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Idaho Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR THE CITY OF VICTOR, VICTOR, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings, used to develop this assessment, is also attached.

Level of Accuracy and Purpose of the Assessment

The Idaho Department of Environmental Quality (DEQ) is required by the U.S. Environmental Protection Agency (EPA) to assess the over 2,900 public drinking water sources in Idaho for their relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area, sensitivity factors associated with the wells, and aquifer characteristics. All assessments must be completed by May of 2003. The resources and time available to accomplish assessments are limited. Therefore, an in-depth, site-specific investigation to identify each significant potential source of contamination for every public water system is not possible. **This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should <u>not be</u> used as an absolute measure of risk and they should <u>not be</u> used to undermine public confidence in the water system.**

The ultimate goal of this assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (DEQ) recognizes that pollution prevention activities generally require less time and money to implement than treating a public water supply system once it has been contaminated. DEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Victor public drinking water system includes the Willow Well, and six springs serving approximately 290 people with 300 service connections. Victor is located in Teton County, 1.5 miles west of the Idaho-Wyoming border (Figure 1).

The primary water quality issue currently facing the City of Victor is slight nitrate contamination.

Defining the Zones of Contribution--Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time of travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. The DEQ used the refined computer model, WhAEM, approved by the EPA in determining the time-of-travel (TOT) zones for water associated with the Teton Valley aquifer in the vicinity of the City of Victor. The computer model used site-specific data, assimilated by DEQ from a variety of sources including local area well logs.

The delineated source water assessment area for the City of Victor's Willow Well can best be described as a 3-year TOT zone supplied by Game Creek and two smaller watersheds (Figure 2). The 3-year TOT zone is 1-mile wide, extending to 2 miles wide at the end of the 3-year TOT zone, and 2 miles long extending east and southeast along Trail Creek, terminating at the contact of the Cache Creek Fault. Since the 3-year TOT ran into the Cache Creek Fault, the model could not compute a 6-year and 10-year TOT zone. The Cache Creek Fault extends north from the 3-year TOT and south from the 3-year TOT, running parallel to Trail Creek into Wyoming (Pampeyan, et. al., 1967). Consequently, the watershed (approximately 21 square miles) which drains into the 3-year TOT zone was delineated using the topographic method developed by the Subsurface Water Subcommittee of the Source Water Assessment Advisory Committee. Topographic maps were used to delineate the location of the watershed divide upgradient of the 3-year TOT zone.

The City of Victor well takes its water from the shallow, unconfined to semi-confined alluvial aquifer above lower Pleistocene silicic volcanic units and Lower Permian and Middle Pennsylvanian thrusted marine detritus (Love and Keefer, 1975). Ground water in the shallow, permeable aquifer is recharged primarily from surface water irrigation, direct precipitation, and canal leakage (Young, et. al., 1991).

The delineation process for the City of Victor's springs used a combination of the topographic method and hydrogeologic mapping. Hydrogeologic maps and reports were used to determine the extent of the geologic formation that serves as the source for the springs. Using this method, it was determined that the springs are fed from a limestone formation which overlies a relatively impermeable formation of dolomitic siltstone (Kilburn, 1964). The topographic method was used to delineate the extent of the watershed (approximately 20 square miles) which drains to the intake area of the springs.

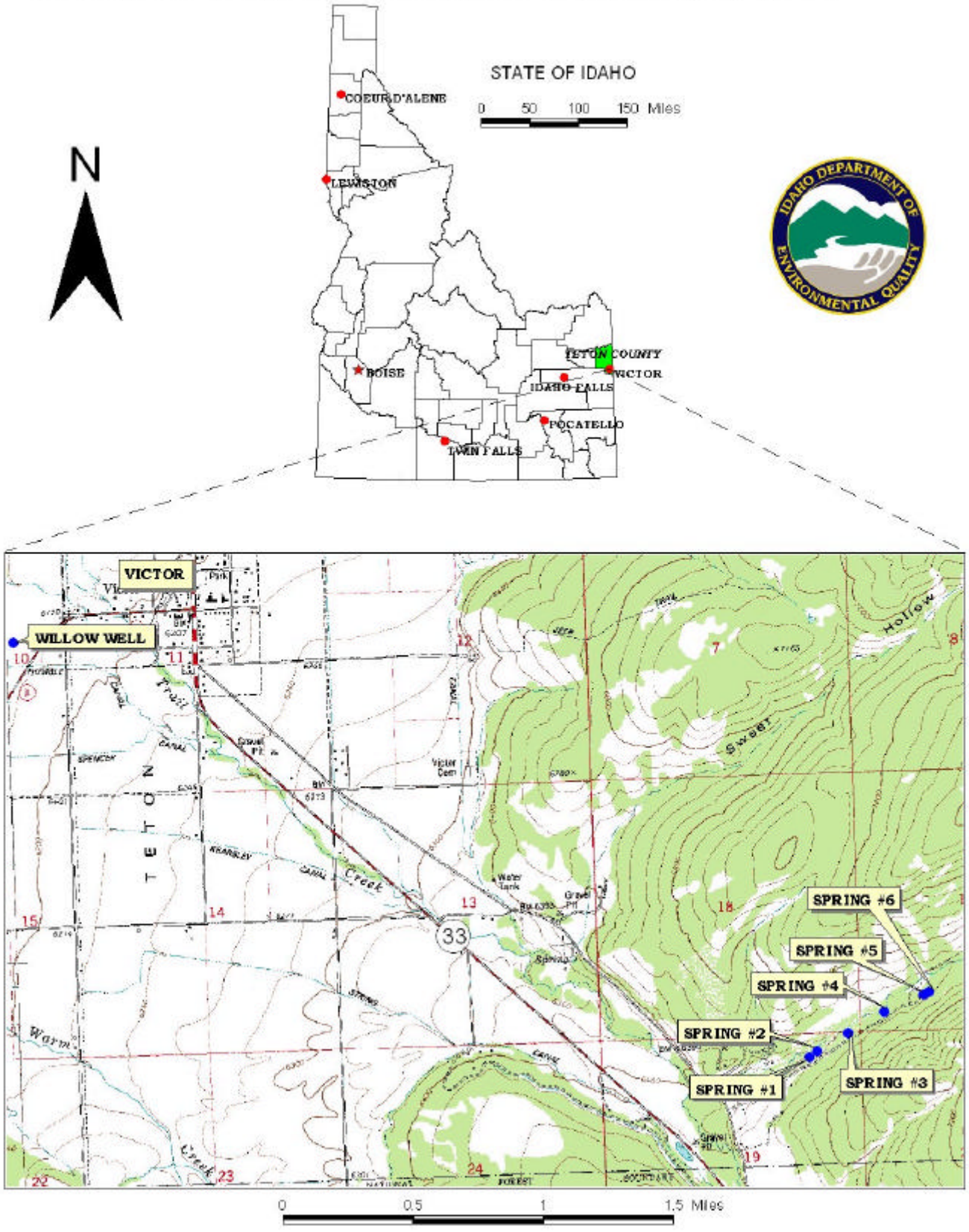
The actual data used by DEQ in determining the source water assessment delineation areas are available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of ground water contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by DEQ and the Victor Water Department and from available databases.

The dominant land use outside the City of Victor is irrigated agriculture. Land use within the immediate area of the wellhead consists of residential property, three major transportation corridors, irrigation canals, and small businesses.

FIGURE 1. Geographic Location of the City of Victor



It is important to understand that a release may never occur from a potential source of contamination provided best management practices are used at the facility. Many potential sources of contamination are regulated at the federal level, state level, or both, to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination, such as educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A contaminant inventory of the study area was conducted during December of 2000. This involved identifying and documenting potential contaminant sources within the City of Victor Source Water Assessment Area through the use of computer databases and Geographic Information System maps developed by DEQ. In February 2000, the Victor Water Department conducted an enhanced potential contaminant inventory to identify additional potential sources of contamination.

Potential contaminant sites located within the delineated source water area for the Willow Well are listed on Table 1 and their locations are depicted on Figure 2. Nearly all of the identified potential contaminant sources are located in the 3-year time of travel zone. If an accidental spill occurred at any of the potential contaminant sources, IOCs, VOCs, SOCs, or microbial contaminants could be added to the aquifer system.

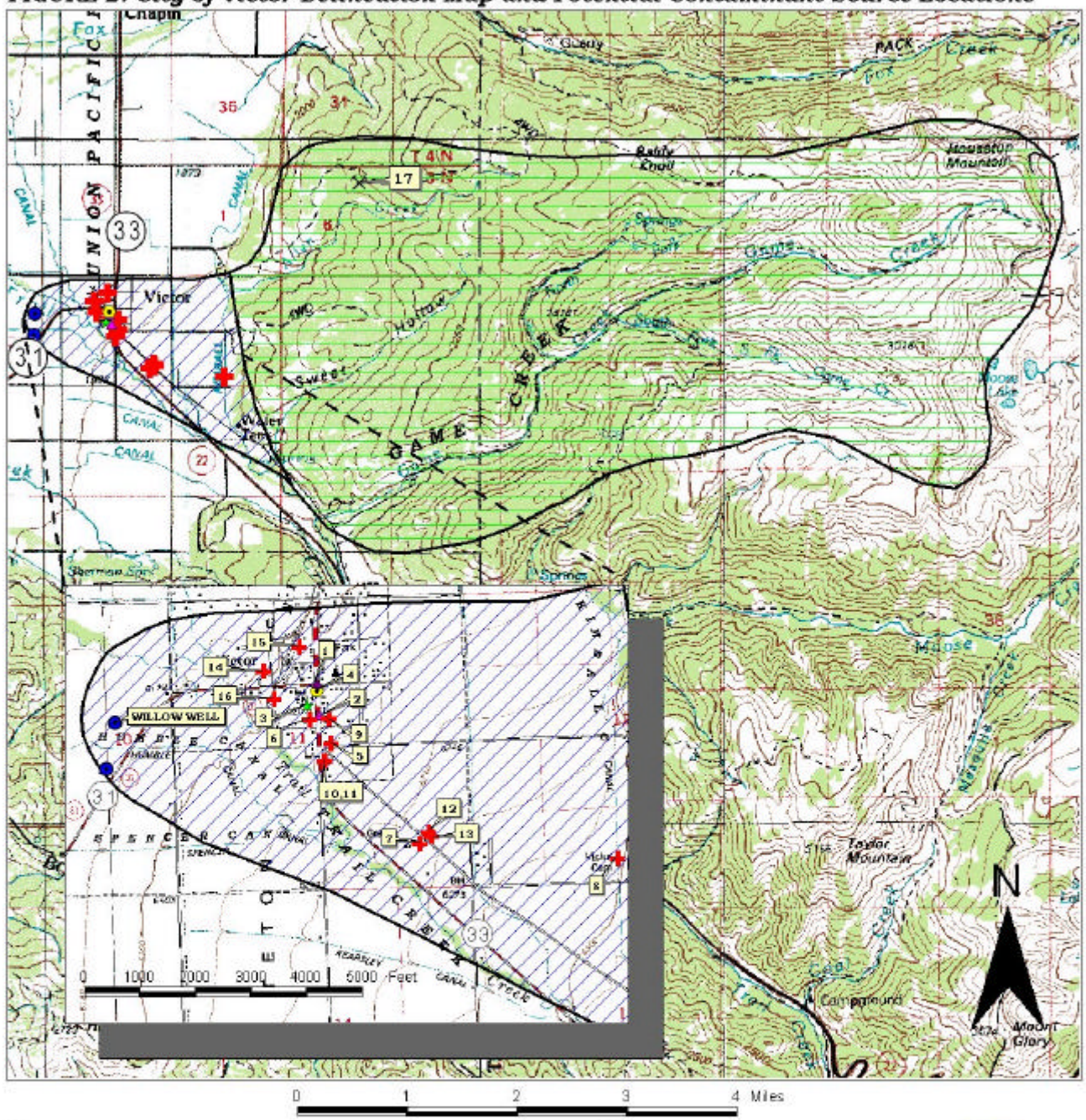
There are no significant potential sources of contamination within the delineated watershed for the City of Victor's springs (Figure 3).

Table 1. City of Victor, Willow Well, Potential Contaminant Inventory

Site #	Source Description	TOT Zone[1] (years)	Source of Information	Potential Contaminants[2]
	Highway 31	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Highway 33	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Union Pacific Railroad	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Trail Creek	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Game Creek	0-3, Watershed	GIS Map	IOC, VOC, SOC, Microbes
	Humble Canal	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Spencer Canal	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Kearsley Canal	0-3	GIS Map	IOC, VOC, SOC, Microbes
	Tonks Canal	0-3	GIS Map	IOC, VOC, SOC, Microbes
1	Gas Station; closed	0-3	Database Search	VOC, SOC
2	Gas Station; open	0-3	Database Search	VOC, SOC
3	<= 200 Cows	0-3	Database Search	IOC, Microbes
4	Service Station, Gasoline and Oil	0-3	Database Search	VOC, SOC
5	Aboveground gas and diesel tank repair	0-3	Enhanced Inventory	VOC, SOC
6	Old Gas Station; Tanks Removed	0-3	Enhanced Inventory	VOC, SOC
7	Microbrewery	0-3	Enhanced Inventory	Microbes
8	Cemetery	0-3	Enhanced Inventory	IOC, Microbes
9	Gas Station	0-3	Enhanced Inventory	VOC, SOC
10	Aboveground Gas Tank	0-3	Enhanced Inventory	VOC, SOC
11	Aboveground Gas Tank	0-3	Enhanced Inventory	VOC, SOC
12	Saw Mill; Closed	0-3	Enhanced Inventory	IOC, SOC
13	Auto Sales and Repair	0-3	Enhanced Inventory	VOC, SOC
14	Auto Repairs and Autobody	0-3	Enhanced Inventory	VOC, SOC
15	Bulk Plant Tanks; Tanks Removed	0-3	Enhanced Inventory	VOC, SOC
16	500 gallon Fuel Tank	0-3	Enhanced Inventory	VOC, SOC
17	Phosphate Mine	Watershed	Database Search	IOC, VOC, SOC

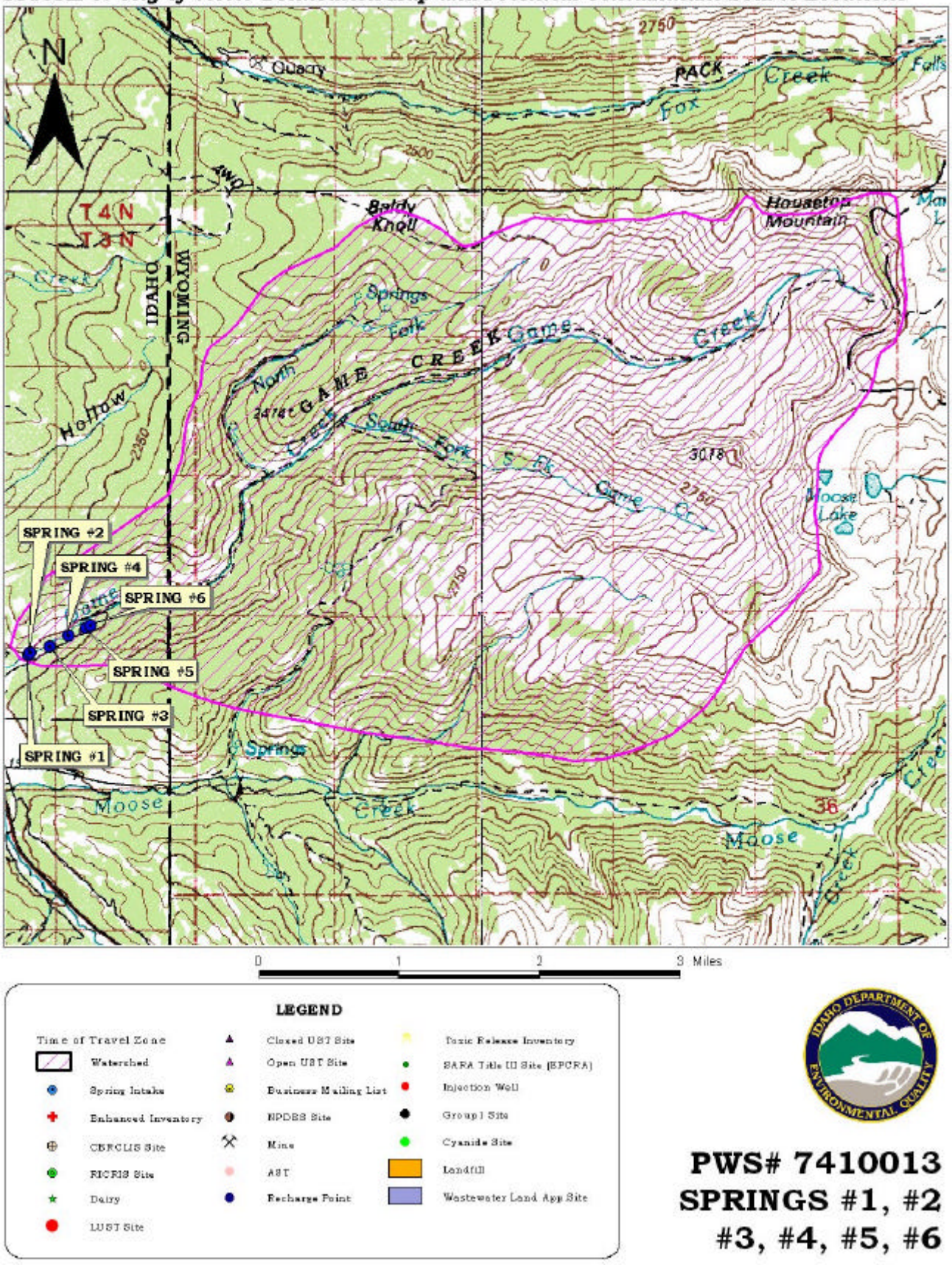
[1] TOT = time of travel (in years) for a potential contaminant to reach the wellhead
[2] IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

FIGURE 2. City of Victor Delineation Map and Potential Contaminant Source Locations



PWS# 7410013
WILLOW WELL

FIGURE 3. City of Victor Delineation Map and Potential Contaminant Source Locations



LEGEND

Time of Travel Zone	Closed UST Site	Toxic Release Inventory
Watershed	Open UST Site	SARA Title III Site (EPCRA)
Spring Intake	Business Mailing List	Injection Well
Enhanced Inventory	NPDES Site	Group I Site
CERCLIS Site	Mine	Cyanide Site
RICRIS Site	AST	Landfill
Dairy	Recharge Point	Wastewater Land App Site
LUST Site		

PWS# 7410013
SPRINGS #1, #2
#3, #4, #5, #6

Section 3. Susceptibility Analyses

The water system's susceptibility to contamination was ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

The hydrologic sensitivity of a well is dependent upon four factors: the surface soil composition, the material in the vadose zone (between the land surface and the water table), the depth to first ground water, and the presence of a 50-foot thick fine-grained zone above the producing zone of the well. Slowly draining soils such as silt and clay are typically are more protective of ground water than coarse-grained soils such as sand and gravel. Similarly, fine-grained sediments in the subsurface and a water depth of more than 300 feet protect the ground water from contamination. The hydrologic sensitivity was high for the Willow Well (see Table 2). This reflects the high permeability of the soil, the lack of thick fine-grained layers retarding the downward movement of contaminants, and the shallow depth to ground water.

Well and Spring Construction

Well construction directly affects the ability of the well to protect the aquifer from contaminants. The construction of the City of Victor's public water system well directly affects the ability of contaminants to influence the well. System construction scores are reduced when information shows that potential contaminants will have a more difficult time reaching the intake of the well. Lower scores imply a system is less vulnerable to contamination. For example, if the well casing and annular seal both extend into a low permeability unit, then the possibility of contamination is reduced and the system construction score goes down. If the highest production interval is more than 100 feet below the water table, then the system is considered to have better buffering capacity. The City of Victor's drinking water system consists of one well that extracts ground water for community uses and six springs that supply the majority of the city's drinking water.

The Willow Well construction score was on the low end of moderate, because the well casing does not terminate in a low permeability soil layer. Important protection aspects of the current Idaho Department of Water Resources well construction standards include casing thickness and extending the casing and annular seal into a low permeability unit. The well is located outside the 100-year floodplain. The Idaho Department of Water Resources *Well Construction Standards Rules* (1993) require all Public Water Systems (PWSs) to follow DEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the *Recommended Standards for Water Works* (1997) during construction.

Based on water chemistry data and local area well logs, the City of Victor's Willow Well is most likely in the upper, unconfined alluvial aquifer.

The system construction score for the six springs was moderate because no record exists detailing the construction of the intake structure for any of the six springs. A November 8, 1994 correspondence from the Idaho Falls Regional Office of the DEQ to the City of Victor indicates that the springs were determined to be under the direct influence of surface water. The surface water body that directly influences the six springs is Game Creek.

Potential Contaminant Source and Land Use

The Willow Well rated high for IOCs (i.e. arsenic, nitrate) and moderate for VOCs (i.e. petroleum products), SOCs (i.e. pesticides) and microbial contaminants (i.e. bacteria). Agricultural chemical sources and irrigated agricultural land use in the delineated source area, as well as the location of multiple potential contaminant sources in the 3-year time of travel zone contributed the largest numbers of points to the contaminant inventory rating. Agricultural land is considered as a source of leachable IOCs because the area is identified as a high nitrogen fertilizer use area. The county level herbicide use was not rated high therefore; agricultural land is not considered a source of SOCs.

The six springs rated low for IOCs, VOCs, SOCs, and microbial contaminants. The land in the Game Creek watershed is largely undeveloped National Forrest land with no significant contaminant sources. No agricultural land exists within 500 feet of the spring intake area. A jeep trail that parallels Game Creek is a potential source of turbidity in the watershed.

From January 1993 to July 2000, total coliform bacteria were detected in water samples taken from the City of Victor's water distribution system. From December 1998 to July 2000, nitrate concentrations ranged from 0.18 milligrams per liter (mg/l) to 0.25 mg/l in five samples collected from the City of Victor's Willow Well. From September 1993 to July 2000, nitrate concentrations ranged from 0.11 mg/l to 0.44 mg/l in six samples collected from the City of Victor's springs. The Maximum Contaminant Level (MCL) for nitrate is 10 mg/l. No volatile organic contaminants (VOCs) or synthetic organic contaminants (SOCs) were detected in the Willow Well or the springs.

Final Susceptibility Rating

An IOC detection above a drinking water standard MCL, any detection of a VOC or SOC, or a detection of total coliform bacteria or fecal coliform bacteria at the wellhead will automatically give a high susceptibility rating to a well, despite the land use of the area, because a pathway for contamination already exists. Hydrologic sensitivity and system construction scores are heavily weighted in the final scores. Having multiple potential contaminant sources in the 0- to 3-year time-of-travel zone (Zone 1B) and much agricultural land contribute greatly to the overall ranking. In terms of total susceptibility, the Willow Well rates moderate for IOCs, VOCs, SOCs, and high for microbial contaminants. In terms of total susceptibility, the six springs rated low for IOCs, VOCs, SOCs, and microbial contaminants.

Table 2. Summary of the City of Victor's Susceptibility Evaluation

Source	Susceptibility Scores[1]									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Willow Well	H	H	M	M	M	M	M	M	M	H
Spring 1	NA	L	L	L	L	M	L	L	L	L
Spring 2	NA	L	L	L	L	M	L	L	L	L
Spring 3	NA	L	L	L	L	M	L	L	L	L
Spring 4	NA	L	L	L	L	M	L	L	L	L
Spring 5	NA	L	L	L	L	M	L	L	L	L
Spring 6	NA	L	L	L	L	M	L	L	L	L

[1]H = High Susceptibility, M = Moderate Susceptibility, L = Low Susceptibility,
IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
NA = not applicable for sources under the direct influence of surface water

Susceptibility Summary

In terms of total susceptibility, the City of Victor Willow Well water rated moderate for IOCs, VOCs, SOCs, and high for microbial contaminants mainly due to agricultural land uses, the nearby location of multiple potential contaminant sources, and high hydrologic sensitivity. The six springs rated low for IOCs, VOCs, SOCs, and microbial contaminants since no significant potential contaminant sources exist in the Game Creek watershed.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a "pristine" area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For the City of Victor, source water protection activities should first focus on correcting deficiencies outlined in the Sanitary Survey. Since total coliform bacteria were detected in the past, the City of Victor should investigate the development of a regular disinfection program to treat this problem. Any spills from the potential contaminant sources listed in Table 1 should be carefully monitored, as should any future development or resource extraction in the Game Creek watershed. Other practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the designated source water areas should be implemented. Most of the designated areas are outside the direct jurisdiction of the City of Victor. Partnerships with state and local agricultural agencies and industry groups should be established and are critical to the success of a source water protection program. Due to the time involved with the movement of ground water, wellhead protection activities

should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission, the local Soil and Water Conservation District, and the Natural Resources Conservation Service.

Since the aquifer appears to have alternating layers of sands and gravels with traces of clay, a deeper well could be installed to offer better protection from total coliform bacteria and inorganic contaminants for the City of Victor. Any new PWS well should meet the *Recommended Standards for Water Works* (1997) as outlined in IDAPA 37.03.09 and IDAPA 58.01.08.550. Water should be taken from beneath a confining clay layer since the upper aquifer has a higher potential for becoming contaminated.

Assistance

Public water suppliers and others may call the following DEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the DEQ office for preliminary review and comments.

Idaho Falls DEQ Office	(208) 528-2650
State DEQ Office	(208) 373-0502

Website: http://www2.state.id.us/deq

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at 1-800-962-3257 for assistance with wellhead protection strategies.

POTENTIAL CONTAMINANT INVENTORY
LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as ASuperfund≅ is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (DEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by DEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Attachment A
City of Victor
Susceptibility Analysis
Worksheet

The final scores for the susceptibility analysis for the Willow Well were determined using the following formulas:

1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)

2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring for the Willow Well:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Final Susceptibility Scoring for the six springs:

0 –6 Low Susceptibility

7 – 12 Moderate Susceptibility

≥ 13 High Susceptibility

Surface Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : SPRING 1
Public Water System Number 7410013 4/18/01 3:04:03 PM

1. System Construction		SCORE
Intake structure properly constructred	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
	Total Potential Contaminant Source / Land Use Score	1	1	1	1
3. Final Susceptibility Source Score		2	2	2	2
4. Final Sourcel Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

Surface Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : SPRING 2

Public Water System Number 7410013 4/18/01 3:04:03 PM

1. System Construction		SCORE
Intake structure properly constructred	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
Total Potential Contaminant Source / Land Use Score		1	1	1	1
3. Final Susceptibility Source Score		2	2	2	2
4. Final Sourcel Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

Surface Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : SPRING 3

Public Water System Number 7410013 4/18/01 3:04:03 PM

1. System Construction		SCORE
Intake structure properly constructred	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
Total Potential Contaminant Source / Land Use Score		1	1	1	1
3. Final Susceptibility Source Score		2	2	2	2
4. Final Sourcel Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

Surface Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : SPRING 4

Public Water System Number 7410013 4/18/01 3:04:03 PM

1. System Construction		SCORE
Intake structure properly constructred	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
Total Potential Contaminant Source / Land Use Score		1	1	1	1
3. Final Susceptibility Source Score		2	2	2	2
4. Final Sourcel Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

Surface Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : SPRING 5

Public Water System Number 7410013 4/18/01 3:04:03 PM

1. System Construction		SCORE
Intake structure properly constructred	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
	Total Potential Contaminant Source / Land Use Score	1	1	1	1
3. Final Susceptibility Source Score		2	2	2	2
4. Final Sourcel Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

Surface Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : SPRING 6

Public Water System Number 7410013 4/18/01 3:04:03 PM

1. System Construction		SCORE
Intake structure properly constructred	NO	1
Infiltration gallery or well under the direct influence of Surface Water	YES	0
	Total System Construction Score	1

2. Potential Contaminant Source / Land Use		IOC Score	VOC Score	SOC Score	Microbial Score
Predominant land use type (land use or cover)	BASALT FLOW, UNDEVELOPED, OTHER	0	0	0	0
Farm chemical use high	NO	0	0	0	
Significant contaminant sources *	NO				
Sources of class II or III contaminants or microbials		0	0	0	0
Agricultural lands within 500 feet	NO	0	0	0	0
Three or more contaminant sources	NO	0	0	0	0
Sources of turbidity in the watershed	YES	1	1	1	1
	Total Potential Contaminant Source / Land Use Score	1	1	1	1
3. Final Susceptibility Source Score		2	2	2	2
4. Final Sourcel Ranking		Low	Low	Low	Low

* Special consideration due to significant contaminant sources
The source water has no special susceptibility concerns

Ground Water Susceptibility Report Public Water System Name : VICTOR CITY OF Well# : WILLOW WELL
Public Water System Number 7410013 4/18/01 1:59:13 PM

1. System Construction		SCORE				
Drill Date	11/1/93					
Driller Log Available	YES					
Sanitary Survey (if yes, indicate date of last survey)	YES	1994				
Well meets IDWR construction standards	YES	0				
Wellhead and surface seal maintained	YES	0				
Casing and annular seal extend to low permeability unit	NO	2				
Highest production 100 feet below static water level	YES	0				
Well located outside the 100 year flood plain	YES	0				
Total System Construction Score		2				
2. Hydrologic Sensitivity						
Soils are poorly to moderately drained	NO	2				
Vadose zone composed of gravel, fractured rock or unknown	YES	1				
Depth to first water > 300 feet	NO	1				
Aquitard present with > 50 feet cumulative thickness	NO	2				
Total Hydrologic Score		6				
3. Potential Contaminant / Land Use - ZONE 1A			IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2	
Farm chemical use high	YES	2	0	0		
IOC, VOC, SOC, or Microbial sources in Zone 1A	NO	NO	NO	NO	NO	
Total Potential Contaminant Source/Land Use Score - Zone 1A		4	2	2	2	
Potential Contaminant / Land Use - ZONE 1B						
Contaminant sources present (Number of Sources)	YES	14	22	21	12	
(Score = # Sources X 2) 8 Points Maximum		8	8	8	8	
Sources of Class II or III leacheable contaminants or	YES	9	19	19		
4 Points Maximum		4	4	4		
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0	
Land use Zone 1B	Greater Than 50% Irrigated Agricultural Land	4	4	4	4	
Total Potential Contaminant Source / Land Use Score - Zone 1B		16	16	16	12	
Potential Contaminant / Land Use - ZONE II						
Contaminant Sources Present	NO	0	0	0		
Sources of Class II or III leacheable contaminants or	NO	0	0	0		
Land Use Zone II	Less than 25% Agricultural Land	0	0	0		
Potential Contaminant Source / Land Use Score - Zone II		0	0	0	0	
Potential Contaminant / Land Use - ZONE III						
Contaminant Source Present	YES	1	1	1		
Sources of Class II or III leacheable contaminants or	YES	1	1	1		
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0		
Total Potential Contaminant Source / Land Use Score - Zone III		2	2	2	0	
Cumulative Potential Contaminant / Land Use Score		22	20	20	14	
4. Final Susceptibility Source Score		12	12	12	13	
5. Final Well Ranking		Moderate	Moderate	Moderate	High	